

## **AMENDMENTS TO THE CLAIMS**

### **In the Claims:**

The following listing of claims replaces all prior versions and listings of claims in the application.

### **Listing of Claims:**

1-79 (Cancelled).

80. (Currently amended) A ~~robotic~~ system for fixation of a tissue sample, comprising:

~~a tissue sample;~~

a first reaction chamber;

a second reaction chamber;

an ultrasound transducer, placeable within the reaction chambers, to irradiate a tissue sample placed within the reaction chambers;

a central processing unit, coupled to the ultrasound transducer, to control the ultrasound transducer; and

a robotic system, coupled to the central processing unit, that moves to move the tissue sample and the ultrasound transducer from [[a]] the first reaction chamber to [[a]] the second reaction chamber.

81. (Canceled).

82. (Currently amended) The ~~robotic~~ system of claim 80 wherein said robotic system is controlled by [[a]] the central processing unit.

83. (Currently amended) The ~~robotic~~ system of claim [[81]] 80, further comprising:

one or more sensors, coupled to the central processing unit, to monitor at least one of an intensity of the ultrasound energy that passes through the tissue sample, an intensity of the ultrasound energy that passes through the reaction chambers and a temperature of the tissue sample,

wherein said ~~robot is controlled by~~ central processing unit ~~which~~ processes information from said one or more sensors.

84-91 (Cancelled).

92. (Currently amended) A system for fixation of a tissue sample comprising:

~~a sample or tissue;~~

a first reaction chamber;

a second reaction chamber;

an ultrasound transducer, placeable within the first and second reaction chambers, to irradiate a tissue sample placed within the first reaction chamber and the second reaction chamber; and

a central processing unit, coupled to the ultrasound transducer, to control the ultrasound transducer; and

a means for moving ~~said sample or~~ a tissue sample and said ultrasound transducer from ~~[[a]] the~~ first reaction chamber to ~~[[a]] the~~ second reaction chamber.

93. (Currently amended) The system of claim 92, further comprising:

one or more sensors, coupled to the central processing unit, to monitor at least one of an intensity of the ultrasound energy that passes through the tissue sample, an intensity of the ultrasound energy that passes through the reaction chambers and a temperature of the tissue sample, and

wherein said means for moving ~~comprises a robotic system that moves~~ said one or more sensors from said first reaction chamber to said second reaction chamber.

94. (Currently amended) The system of claim 93, wherein said means for moving is controlled by ~~[[a]] the~~ central processing unit.

95. (Previously presented) The system of claim 93, wherein said means for moving is controlled by a central processing unit which processes information from said one or more sensors.

96. (Canceled).

97. (Previously presented) The system of claim 80 wherein the first reaction chamber contains a fixative.

98. (Currently amended) The system of claim 80 wherein the ~~next~~ second reaction chamber contains ethanol.

99. (Currently amended) The system of claim 80 wherein the ~~next~~ second reaction chamber contains xylene.

100. (Currently amended) The system of claim 80 wherein the ~~next~~ second reaction chamber contains paraffin at 60°C.

101. (Previously presented) The system of claim 92 further comprising an ultrasound transducer having two or more heads.

102. (Previously presented) The system of claim 101 wherein a first head of the transducers produces an ultrasound frequency that is different from the ultrasound frequency of a second head.

103. (Previously presented) The system of claim 92 further comprising two or more ultrasound transducers.

104. (Previously presented) The system of claim 103 wherein the each of the transducers produces an ultrasound frequency different from the ultrasound frequency produced by at least one other transducer.